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A NOTE ON THE CONCEPT OF DISGUISED UNEMPLOYMENT WITH REFERENCE TO THE PRODUCTIVITY OF FARM FAMILY LABOUR

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The significance of a concept can be tested by reference to the purpose which it can serve. The concept of disguised unemployment was rather unknown in classical economics which, however, recognized the pressure of growth of population and diminishing returns tending to lead the economy in the absence of technical progress to a state of stagnation and a subsistence or near-subsistence level of wages. The concept of disguised unemployment is used as a new tool in development economics claiming a special contribution of its own to the analysis of an under-developed economy. The belief is that the agricultural economy of an under-developed country is largely characterized by not so much open unemployment as by disguised unemployment.

Disguised unemployment in simple words means nominal employment with little contribution to productivity. But the exponents of the theory of disguised unemployment would go a little deeper to attribute to it a number of characteristics. These are as follows :

(a) It is a concept which applies to self-employment and, therefore, to a farm economy mainly dependent on self-employment.

(b) It indicates a state of economy where marginal productivity of labour is zero and from which, therefore, a part of labour force can be withdrawn without reduction of output even in the present state of technology.

(c) It indicates a state of economy where self-employment is pushed so far as to lower the self-wage below the market wage.

It should be noted that output rather than hours of work is taken here as the index of employment. There is not much significance in asking a self-employed person to state the number of hours or days of his employment a year, though it is quite pertinent to enquire whether his productivity is large or small or whether his net income is sufficient or insufficient for his staying in the occupation. Even in the case of workers in wage employment, productivity or income may better indicate their economic condition than hours of employment.

II

In the economy of a farm which is operated by its owner mainly by using self or family labour the most relevant question is : Is there any positive net return and, if so, what is this net return compared to the wage rate prevailing in the market concerned ? This implies an examination of the relationship between self-wage and market wage. The net return mentioned here is arrived at by deducting from output all costs except value of family labour imputed at the market wage. This net return is, therefore, nothing but self-wage.

The theoretical proposition is that the self-wage in an under-developed farm economy is lower than the market wage. How does it tend to happen ? When employment of labour is governed by the capitalist principle of profit-maximization it is pushed up to the point of equality between the prevailing wage rate and the marginal productivity of labour. The surplus accrues as an excess of product over the aggregate wage cost and this is mainly due to productivity of labour in excess of wage cost on account of the earlier units of labour which is subject to the law of diminishing returns like any other input. It is, however, assumed that the family farm uses its own labour up to the point of zero marginal productivity as there is no consideration of wage payment. Figure 1 illustrates this process. In Figure 1 the horizontal axis represents quantity of labour and the vertical axis represents marginal product of labour, the curve MP representing marginal productivities at different levels of employment of labour. OP is the total quantity of available family labour. When OT is the wage rate it would be most profitable for the farm using hired labour to employ OR amount of labour. This is because if he pushes employment up to P, production is maximized—, while there is loss on account of the product NRP equivalent to NQP which reduces the profit MNT on account of the product MORN.

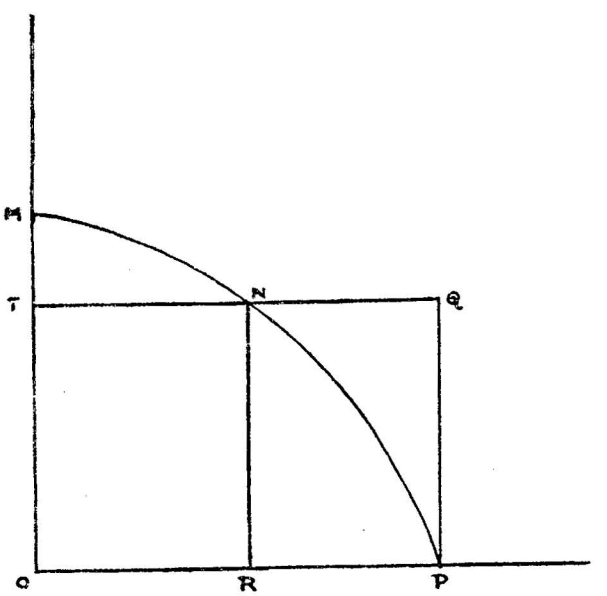

Figure 1

But in the case of farm using self-labour alone no question of wage payment arises—and it would gain more by using self-labour upto OP instead of restricting it to OR. The average self-wage earned by the farm is $\left(\frac{MNPO}{OP}\right)$. Whether $\left(\frac{MNPO}{OP}\right)$ will be greater or lower than OT—the market wage depends upon whether NQP is lower or greater than MNT.

The lower the market wage (OT) is, the lower would be NQP than MNT and greater would be self-wage $\left(\frac{MNPO}{OP}\right)$ than the market wage $\left(\frac{OPQT}{OP}\right)$. The higher the market wage (OT) is, the greater would be NQP than MNT and lower would be self-wage $\left(\frac{MNPO}{OP}\right)$ than the market wage $\left(\frac{OPQT}{OP}\right)$. In equilibrium the market wage is equal to the marginal productivity of labour in employment. Marginal productivity of labour diminishes with increase in employment. Hence the employer would employ larger quantity of labour at a lower wage rate. When the market wage rate goes on falling with an increase in employment a point comes where the self-wage starts becoming higher than the market wage. Thus when marginal productivity of labour is near zero and so the market wage rate is also very low, the self-wage would be higher than the market wage rate. In recent years a good deal of controversy has been aroused around simultaneous prevalence of the hypothetical zero marginal productivity and positive wage rate. The market wage following zero or near zero marginal productivity of labour cannot fall down to zero, because self-wage would now be higher than the market wage. There would be substitution of self-employment for wage employment thus raising the market wage to a point appreciably higher than zero.[1] The relationship between market wage and self-wage may be determined empirically.

Table I presents data relating to value of family labour, family labour income and return per rupee of family labour for selected farms. The data are drawn from Reports on farm management investigations conducted by different centres of farm management studies during 1956-57 in West Bengal, Bombay, Madhya Pradesh, Uttar Pradesh and Orissa.[2] The most general observation is that value of family labour per acre is higher for smaller holdings and lower for larger holdings. The rate of decrease in family labour input with increase in holding-size can be derived from regression equations showing relationships of family labour with size of holdings (Table II).

Family labour income which is the residue of income after meeting all expenses except imputed value of family labour is larger for smaller farms. But when return per unit of family labour worth a rupee is estimated it is found that the return is generally lower for smaller farms and higher for larger farms. This

1. This implies that OT in equilibrium would tend to approximate to a magnitude at which MNT and NQP of Figure 1 are equal.
2. The districts referred to here are 24-Parganas and Hooghly in West Bengal, Akola and Amraoti in Madhya Pradesh, Ahmednagar in Bombay, Sambalpur in Orissa and Meerut and Muzaffarpur in Uttar Pradesh.

TABLE I—RETURN PER RUPEE OF FAMILY LABOUR

Size of farm (acres)	Value of family labour per acre (Rs.)	Family labour income per acre (Rs.)	Return per rupee of family labour
1	2	3	4
West Bengal (Hooghly and 24—Parganas), 1956-57			
0.01 — 1.25	62.63	65.57	1.05
1.26 — 2.50	62.63	100.90	1.62
2.51 — 3.75	64.18	126.33	1.97
3.76 — 5.00	57.59	70.65	1.23
5.01 — 7.50	55.36	125.60	2.27
7.51 — 10.00	41.74	116.07	2.78
10.01 — 15.00	19.21	39.11	2.04
Above 15.00	25.54	65.92	2.58
Madhya Pradesh (Akola and Amraoti), 1956-57			
0 — 5	13.72	64.86	4.73
5 — 10	13.22	49.33	3.73
10 — 15	11.65	49.56	4.25
15 — 20	11.59	39.68	3.42
20 — 30	7.40	46.62	6.30
30 — 40	8.64	42.69	4.94
40 — 50	4.97	41.94	8.44
50 and above	2.67	33.14	12.41
Bombay (Ahmednagar), 1956-57			
0 — 5	31.2	21.6	0.69
5 — 10	24.9	42.3	1.70
10 — 15	13.2	15.7	1.19
15 — 20	19.1	73.9	3.87
20 — 25	11.5	18.6	1.62
25 — 30	11.4	32.8	2.88
30 — 50	9.6	23.2	2.42
50 and above	7.0	16.1	2.30

(Contd.)

TABLE I—*Concld.*

1	2	3	4
Orissa (Sambalpur), 1957-58			
0.01 — 2.50	41.13	85.58	2.01
2.51 — 5.00	36.11	70.39	1.95
5.01 — 10.00	31.58	72.80	2.31
10.01 — 15.00	13.62	61.83	4.54
Above 15.00	8.98	39.38	4.39
Uttar Pradesh (Meerut and Muzaffarpur), 1956-57			
Below 5	66.0	68.2	1.03
5 — 10	53.5	91.2	1.70
10 — 15	36.4	79.1	2.17
15 — 20	37.6	102.2	2.72
Above 20	31.3	122.6	3.92

TABLE II—REGRESSION EQUATIONS

State	Relationship of family labour input with size of farm	Relationship of family labour income with family labour input	Level of Significance
West Bengal ..	$Y_1 = 68.12 - 2.83\ x$	$Y_2 = 14.25 + 1.95\ Y_1$*	Significant at 1%
Madhya Pradesh ..	$Y_1 = 14.25 - 0.198\ x$	$Y_2 = 31.00 + 1.62\ Y_1$	Significant at 10%
Bombay ..	$Y_1 = 24.63 - 0.364\ x$	$Y_2 = 3.17 + 2.25\ Y_1$*	Significant at 5%
Uttar Pradesh ..	$Y_1 = 71.40 - 2.091\ x$	$Y_2 = 97.40 - 0.1087\ Y_1$	Insignificant
Orissa ..	$Y_1 = 44.28 - 2.45\ x$	$Y_2 = 37.44 + 1.09\ Y_1$	Significant at 5%

Where x = Size of farms in acre,

Y_1 = Value of family labour per acre,

Y_2 = Family labour income per acre.

* These results are obtained with some adjustment of the data, that is, elimination of a few abnormal cases.

is, of course, a trend opposite to the variation of output per acre from lower to higher size groups of holding. This obviously means that though total productivity of labour is higher for smaller holdings it is less than proportionate to the application of labour owing to the operation of the law of diminishing marginal productivity.

III

A closer analysis of the labour productivity may now be attempted with reference to the broader question of agricultural development. A unity return per rupee of family labour expenditure is taken as a norm on the assumption that subsistence requirements of the farm family at this return are satisfied.

On such a basis we find from Table I that in West Bengal the farms of size below 1.26 acre are just on a par with the norm. Farms of size exceeding 1.25 acre are above the norm, the return of labour for farms in the group 7.51—10.00 acres being 2.78—appreciably higher than the norm. In fact all farms above 5 acres are getting a labour return ranging from 2.04 to 2.78.

In Bombay (Ahmednagar) the return to family labour is below par only for farms of size smaller than 5 acres. For farms above 15 acres it ranges from 1.62 to 3.87.

In Uttar Pradesh the return to family labour is a little higher than the par for farms below 5 acres. For farms in the group 5—10 acres it is 1.70 and for the farms above 10 acres it ranges from 2.17 to 3.92.

In Madhya Pradesh family labour return is much higher than the norm for all farms, small or large, ranging from 2.42 to 12.41. The return is as high as 4.73 for farms below 5 acres.

In Orissa also the return to family labour is much higher than the norm for all the holding-groups ranging from 1.95 to 4.54.

Thus in the case of 4 States out of 5, the return to family labour is equal to or above the norm even for tiny farms. The proposition that there is underproductivity of labour cannot be asserted, though the productivity of labour on smaller farms is lower than that on the bigger farms. In the absence of production functions for different groups of holding we do not have any evidence of labour being employed up to zero marginal productivity. In all probability there is enough disutility of labour not compensated by the prevailing rate of return to labour which prevents family labour from being used up to the point of zero marginal productivity more or less for all farms and particularly for bigger farms. There is another possibility. This is that on small farms when the employment of family labour reaches the point of equality between the wage rate and marginal productivity of labour, it would naturally seek employment on larger farms at a wage equal to marginal productivity instead of pushing self-employment to a level of income below the point of equality between the wage rate and marginal productivity. This process is shown in Figure 2. In Figure 2 the marginal productivity curves of two farms A, the smaller one and B the bigger one are represented by $M_1 P_1$ and $M_2 P_2$ respectively.

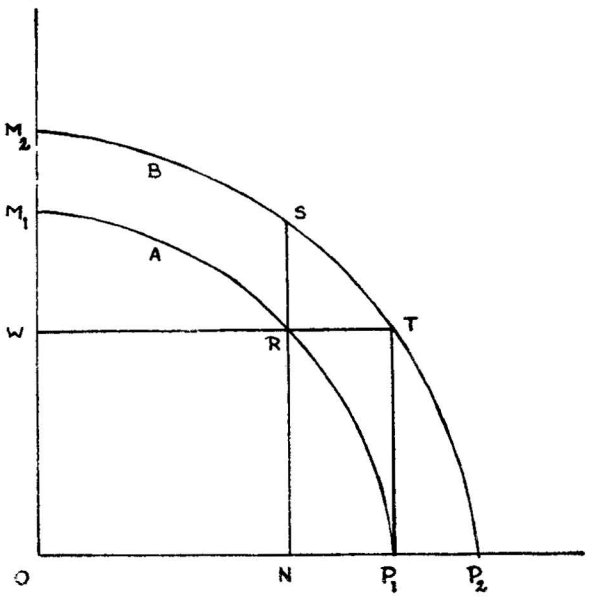

Figure 2

When the market wage is OW farm A and farm B would employ self-labour to the extent of ON at which the marginal productivity of labour on farm A is NR equal to OW and on B is NS which exceeds OW by RS. Assume that OP_2 is the total quantity of self-labour available on farm B and OP_1 is the total quantity of self-labour available on farm A. As marginal productivity of labour at N is higher than the wage rate OW for farm B it would employ more labour and draw upon the labour supply of farm A up to P_1 at which P_1T the marginal productivity of labour on farm B is equated to the wage rate OW. Thus the average wage for the family labour of farm A would be $\frac{M_1RTP_1O}{OP_1}$ which is greater than $\frac{M_1P_1O}{OP_1}$ (the wage which would have been earned by farm A if the employment of its own labour were pushed to zero marginal productivity). Farm B obtains a total output M_2TP_1O with self-labour to the extent of ON and hired labour to the extent of NP_1, TP_1P_2 being the amount of potential output which is substituted by leisurely hours of its own workers which is a general experience on bigger farms.

IV

Labour productivity functions showing the relationship of family labour income of the farms with family labour input are fitted to the data of Table I and presented in Table II. The outstanding fact that emerges from these functions is that the marginal productivity of family labour is positive and higher than one in 4 States—West Bengal, Madhya Pradesh, Orissa and Bombay.

It is negative in Uttar Pradesh where the labour productivity function is not valid according to the statistical test of significance. Thus the concept of so-called disguised unemployment at less than the market wage rate dwindles into something unreal at least in the four areas mentioned above.

Even though we can conceive of marginal productivity falling below the wage rate, is it possible for average productivity (average earning of rate) of family labour to fall below the market wage rate ? If the productivity of family labour is less than the wage rate, will not there be an increased pressure of labour supply on employment bringing down the wage rate—so that average productivity becomes again equal to or higher than the wage rate on the family farm ? In fact average labour earning of the family farm cannot remain below the level of subsistence to which the wage rate in an under-developed agricultural economy tends to approximate. For smaller farms it is the consideration of subsistence which determines the intensity of self-employment and it is the subsistence requirement which might force self-employment to the point of zero marginal productivity of labour—but that will at the same time depress the market wage rate and maintain average productivity (earning) of self-labour more or less at equality with the market wage level. With the realization of such a possibility the norm with reference to which disguised unemployment can be measured disappears. Concept of disguised unemployment, therefore, can be replaced by a system of inter-comparison of average and marginal productivities of labour in different sectors of the economy.

There is full employment at the farm level in the sense that observably surplus labour is not available for employment at a lower wage or even at the existing wage. The question is whether such full employment is commensurate with a living wage or not.

A more useful criterion for the assessment of self-employment on family farms would be to identify the point of emergence of investible surplus over the range of different sizes of farms. Farms below that point would need reorganization to release labour for non-farm sectors without fall in production.

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